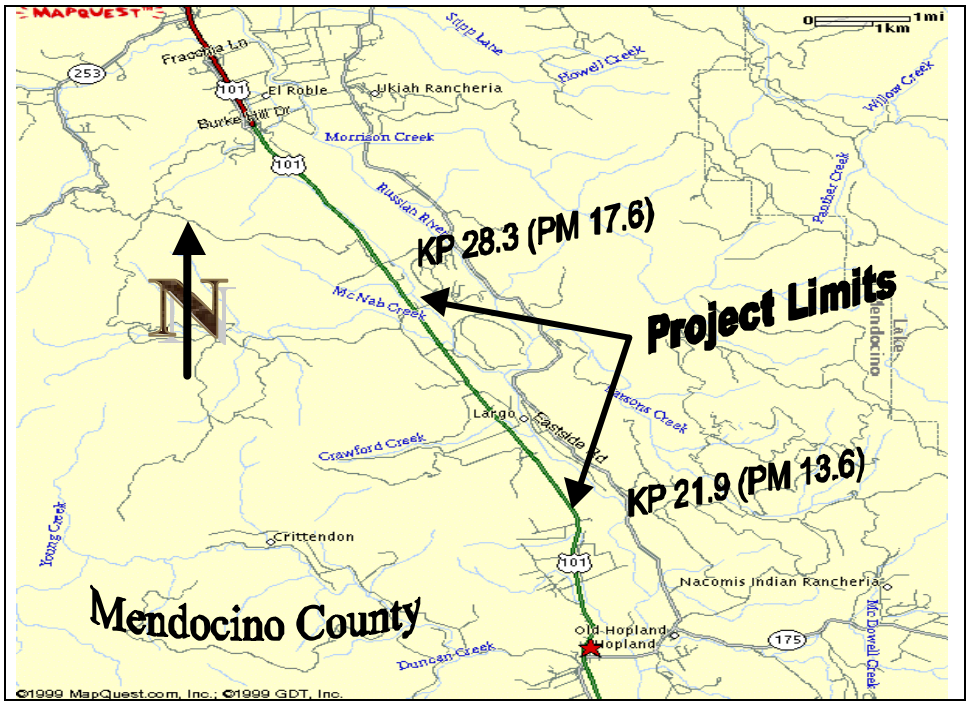
01–Men-101 KP 21.9/28.3 (PM 13.6/17.6)
03-261 20244K
STIP 4-Lane Expressway
February 2000

PROJECT STUDY REPORT
(Project Development Support)



In Mendocino County, On Route 101, Near Hopland, From 2.4 KM North of Junction Route 175 to 2.7 KM North of McNab Creek Bridge

I have reviewed the right of way information contained in this Project Study Report (Project Development Support) and find the data to be complete, current and accurate:

_____
CLAY NYSTROM, NORTH REGION DIVISION CHIEF – RIGHT OF WAY

APPROVAL RECOMMENDED:

_____
ALAN ESCARDA, PROJECT MANAGER

APPROVED:

_____ _____

RICK KNAPP, DISTRICT 1 DIRECTOR DATE

This Project Study Report (Project Development Support) has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

_____ _____

DENNY FONG, *REGISTERED CIVIL ENGINEER* *DATE*

PROJECT STUDY REPORT
(PROJECT DEVELOPMENT SUPPORT)

INTRODUCTION

This STIP candidate project is for the construction of a 4-lane freeway/expressway on Route 101, in southern Mendocino County. The project is needed to relieve congestion and improve safety in the Route 101 corridor, consistent with State and Regional transportation planning. This project would close a gap in the freeway/expressway system.

Five preliminary alternatives have been identified as follows:

Alternative A: The proposed project limits are from KP 21.9 to 28.3 (PM 13.6 to 17.6). This alternative will upgrade the existing 2-lane conventional highway to a 4-lane freeway. The design speed considered is 110 km/h.

The proposed typical section for this alternative is consistent with the Hopland Bypass project and with the existing 4-lane facility north of this project. This controlled access alternative will include frontage roads and two interchanges, one interchange at approximately KP 21.9 (PM 13.6) near Jepson Winery and the other at approximately KP 26.5 (PM 16.5) at Henry Station Road. In addition, this alternative will maintain the existing truck climbing lanes and has an estimated cost as follows:

- Roadway Construction **$42.7 Million**
- Structures Construction **$6.5 Million**
- Right-of-way **$4.9 Million**
- **Total Estimated Cost** **$54.1 Million**

Alternative B: The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6). This alternative will upgrade the existing 2-lane conventional highway to a 4-lane freeway/expressway. The design speed considered is 110 km/h.

This alternative proposes a 4-lane expressway facility (limited access controlled) from KP 22.5 (PM 14.0) near Jepson Winery to KP 26.5 (PM 16.5) at Henry Station Rd, without frontage roads and a freeway facility (access controlled) from KP 26.5 to 27.7 (PM 16.5 to 17.2) with frontage roads. This alternative will also maintain the existing truck climbing lanes and has an estimated cost as follows:

- Roadway Construction **$35.7 Million**
- Structures Construction **$3.0 Million**
- Right-of-way **$3.1 Million**
- **Total Estimated Cost** **$41.8 Million**

Alternative C: The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6). This alternative will upgrade the existing 2-lane conventional highway to a 4-lane expressway without frontage roads. The design speed considered is 110 km/hr.

This alternative will have partial access control to provide limited access, where necessary, from private

driveways and will maintain the existing truck climbing lanes. The estimated cost is as follows:

- Roadway Construction **$27.1 Million**
- Structures Construction **$0.9 Million**
- Right-of-way **$1.3 Million**
- **Total Estimated Cost** **$29.3 Million**

Alternative D: The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6). This alternative will upgrade the existing 2-lane conventional highway to a 4-lane conventional highway. The design speed considered is 110 km/h.

This alternative proposes a 4-lane conventional highway facility with typical section that is consistent with the Hopland Unit III Project from KP 9.3 to KP 14.8 (PM 5.8 to 9.2). This alternative will also maintain the existing truck climbing lane and will not include frontage roads or access control. This alternative has an estimated cost as follows:

- Roadway Construction **$23.2 Million**
- Structures Construction **$1.2 Million**
- Right-of-way **$1.0 Million**
- **Total Estimated Cost** **$25.4 Million**

Alternative E: The no build alternative would retain the existing 2-lane conventional highway facility with the same alignment and geometry. There is no construction cost involved with this alternative. However, current maintenance cost will escalate significantly due to future increases in traffic volume.

BACKGROUND

As a rural principal arterial highway routing in District 1, Route 101 is considered the "lifeline of the north coast". It is part of the National Highway System, and is both a high emphasis and focus route in the Inter Regional Road System (IRRS). Upgrading Route 101 between the San Francisco Bay Area and Oregon is critical to the economic well being of this area. Development of Route 101 to 4-lane freeway/expressway (where feasible) has been a long standing District priority. Emphasis has generally been from south to north, since through traffic volumes are generally higher in the south.

In the project area, passing opportunities are adequate since there are two truck climbing lanes in both southbound and northbound directions that are nearly one mile long. Numerous private roads intersect Route 101 along with a channelized public road, Henry Station Road (County Road No. 107), KP 26.5 (PM 16.5). The total accident rate, as of November 1998, for this segment is below the statewide average; however, the fatality rate of 0.059 accs/mvm (0 .037 accs/mvkm) is 1.9 times greater than the statewide average of 0.031 accs/mvm (0.019 accs/mvkm). Common types of accidents are head-on collisions with oncoming traffic, vehicles running off the road, and vehicles running into livestock or deer.

A freeway agreement was adopted for the segment from KP 14.3 to 28.3 (PM 8.9 to 17.6) in November 1964. The original project was programmed in the 1984 STIP, and a Stage I Work Program (Attachment N) was developed in February 1986. Because of the high cost, the adopted alignment of Route 101 was divided into two segments. The segment from KP 14.3 to 22.5 (PM 8.9 to 14.0) is the Hopland Bypass

Project and the segment from KP 21.9 to 28.3 (PM 13.6 to 17.6) is the North Hopland Project. The North Hopland Project was dropped in August 1986 to fully fund the Hopland Unit III Project, KP 9.3 to 14.8 (PM 5.8 to 9.2). Since adoption of the North Hopland Project alignment preceded the environmental process, the adopted alignment cannot be considered valid without a full study of alternatives and an approved environmental document.

This project, the North Hopland Project, is part of two other projects in the corridor that are in various stages of development. The Hopland Unit III is currently in the design phase and is expected to be the first project in construction, and the Hopland Bypass Project is currently in the project approval / environmental document (PA&ED) development phase with construction completion anticipated for year 2010. The North Hopland Project, being the last, will coordinate with these two projects for consistency in design and scheduling. (See Attachment C for strip photographic aerials of project site.)

No known hazardous waste sites have been identified within the project limits.

Potential Issues

Impacts to Agricultural Lands: Much of the right of way expected to be required for this project is agricultural land, primarily used for growing wine grapes. This impact will be minimized wherever possible by adjusting the alignment so that the new lanes will be on unimproved land and, where practical, by widening on both sides of the existing alignment to reduce right of way acquisition from any single property owner.

Median Width: Right of way needs are likely to be increased by median width requirements. The proposed alternatives have considered various median widths without sacrificing safety and design standards. Proposed widths vary from 18.6 m, Alternative A and B, to 4.2 m, Alternative D. The amount of right of way needed may become an issue with property owners and other local residents.

Access to Property Adjacent to Caltrans Right of Way: In order to minimize right of way take, the proposed alternatives consider both full access control, no access control, and partial access control. Partial access consists of severing some access to adjacent property, rather than constructing additional or longer frontage roads. Although the property owners would be compensated for damages, this may still become an issue during the environmental approval process.

Should the 4-lane divided freeway, Alternative A, be preferred, the location of the interchanges may become an issue. The County, California Department of Forestry, farmers, ranchers, residents and Retech Corporation will be contacted for comments on interchange locations.

NEED AND PURPOSE

Purpose Of Project:

The purpose of this project is to provide a safe, reliable, and updated transportation facility in the Route 101 corridor, consistent with State and regional transportation planning. This project would close a gap in the freeway/expressway system, and would result in a more efficient highway facility. It would also provide good passing opportunities and reduced travel time through the corridor.

Need For Project:

Route 101 is the "lifeline of the north coast", and should be improved to current standards. It is part of the National Highway System, and is both a High Emphasis and Focus Route on the State's Interregional Road System. Route 101 is functionally classified as a principal arterial, and carries high volumes of truck and recreational traffic.

This 6.1 kilometer (3.8 mile) segment of two lane highway is the only remaining gap that is not programmed for 4-lane freeway/expressway or already constructed to 4-lane freeway/expressway between the San Francisco Bay area and central Mendocino County.

Elements of The Project Include:

- **Provide an Updated Transportation Facility in the Route 101 Corridor**: This segment of Route 101 is a 2-lane conventional highway in rolling terrain, with relatively high peak hour volumes, particularly during summer months and holiday weekends. Existing passing lanes provide some guaranteed passing opportunities, but more are needed to accommodate peak hour volumes.

- **Accommodate Future Traffic Growth**: Traffic volumes are expected to increase by approximately 70% on this route over the next 20 years. The concept level of service established for this stretch of roadway has been set at level "C". The current peak hour level of service D will worsen to F with significant delays. Traffic volume increases are expected to decrease operating speeds and level of service, while increasing delay, accidents, and operational conflicts. Construction of a 4-lane roadway facility would mitigate traffic volume increases by providing a safer facility that would reduce travel time and minimize operational conflicts. See Attachment I, Traffic Scoping Checklist, for additional traffic information. The current 1998 annual ADT volume is 5,300.

- **Increase Safety**: When compared to similar 2-lane facilities, the fatality rate for this facility is 1.9 times greater than the statewide average. The all "build" (4-lane freeway/expressway facility) alternatives would be expected to decrease the fatality rate and the total accident rate compared to the existing 2-lane conventional highway facility. By providing a standard median, oncoming traffic would be separated, which would decrease potential for head-on collisions. Providing flatter fill slopes, would help prevent rollover accidents and allow motorists more recovery time to avoid fixed objects. Elimination of at grade intersections would enhance safety. Also, lighting at intersections and interchanges is another design feature that would enhance safety and will be considered in further expanded project studies under safety analysis.

- **Consistency with State and Regional Planning**: Construction of a 4-lane freeway or expressway in the project area would be consistent with both the Caltrans 'Interregional Transportation Strategic Plan", dated June 1998, and the District 1 Route Concept Report for Route 101, dated November 1994. The North Coastal Counties Supervisors Association lists this project as priority no. 4 for 2000 (or 2002) STIP in October 1998.

Subsequent alternative development and selection of preferred alternative will be coordinated with the Hopland Bypass selected alternative.

PROJECT ALTERNATIVES AND ALTERNATIVE ANALYSIS

The geometric cross sections for each of the four build alternatives can be found in Attachment D of this report. All of the build alternative considered will have erosion control for original ground disturbance, and drainage facilities will be upgraded for the new roadway configuration.

The "build" alternatives all connect with the Hopland Bypass Project south of this proposed project. The Hopland Bypass Project is scheduled for construction completion in 2010 and is currently programmed for the Environmental Only (PA&ED) in the 1998 STIP. The north end of this project will conform to the existing 4-lane divided freeway segment.

The estimated capital cost of this North Hopland 4-Lane Project is between $25.4 to $54.1 million. Based on Alternative A, capital costs plus support costs through construction are estimated to be $65 million. Support cost through the PA&ED is estimated to be $2.2 million. For purpose of analysis, the support cost amount of Alternative A will be used for the other three alternatives. Both the cost and the benefit/cost ratio of the project will be issues discussed during the development of this project. A summary of estimated costs is detailed in the following table:

NORTH HOPLAND 4-LANE ESTIMATED PROJECT COSTS
FOR EACH BUILD ALTERNATIVE
EA 20244K (in millions of dollars)

	Alternative A 4-Ln Freeway (Access Control)	**Alternative B** 4-Ln Freeway/Exp. (Access Control)	**Alternative C** 4-Ln Expressway (Partial Access Control)	**Alternative D** 4-Ln Highway (No Access Control)
Roadway	$ 42.7 M	$ 35.7 M	$ 27.1 M	$ 23.2 M
Structures	$ 6.5 M	$ 3.0 M	$ 0.9 M	$ 1.2 M
Right-of-Way*	$ 4.9 M	$ 3.1 M	$ 1.3 M	$1.0 M
TOTAL	**$54.1 M**	**$ 41.8 M**	**$29.3 M**	**$25.4 M**

** The value for each alternative denotes the present capital cost of right-of-way. See Attachment J for escalated capital cost of right-of-way to the projected year of acquisition.*

Alternative A

The proposed project limits are from KP 21.9 to 28.3 (PM 13.6 to 17.6).

This alternative will consist of constructing a 4-lane, controlled access, freeway system with frontage roads and two interchanges. The geometric cross section of this alternative can be found in Attachment D, and is described as follows:

4-Lane Divided Freeway

- 18.6 m (61') unpaved median
- 4-3.6 m (12') lanes (additional lanes at truck climbing locations)
- 3.0 m (10') outside shoulders
- 1.5m (5') inside shoulders
- Frontage roads on both sides
- 2-3.6m (12') lanes (frontage)
- 1.2m (4') shoulders (frontage)
- 110 km/h design speed

The existing structural section will be utilized wherever possible to minimize aggregate material cost. New bridges will be constructed adjacent to existing structures to accommodate for the widened section and for frontage roads at Crawford Creek Bridge # 10-168, KP 23.5 (PM 14.6) and at McNab Creek Bridge # 10-04, KP 25.7 (PM 16.0). Proposed interchanges will be placed near the Jepson Winery, KP 22.0 (PM 13.7) and at Henry Station Road, KP 26.5 (PM 16.5).

Conventional or spread diamond interchanges are proposed at both of these locations. This alternative has a greater amount of roadway excavation than roadway embankment. Much of the excess earthwork could be used to flatten fill slopes to 1 to 4 or greater. Given the steep grade at the winery interchange, deceleration / acceleration lanes would need to be added to facilitate merging trucks. Further investigation of the previous mentioned freeway agreement would be needed to incorporate the proposed frontage roads into the County road system. To help reduce excessive earthwork, separating the profile grade and slope design around existing truck climbing lanes should be considered.

From Attachment F, the estimated roadway excavation quantity for this alternative is 2.1 million cubic meters (2.7 million cubic yards), and the roadway embankment quantity is 700,000 cubic meters (920,000 cubic yards). Disposal sites will need to be located for removal of surplus material.

Alternative B

The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6).

This alternative will consist of constructing a 4-lane freeway/expressway system with partial frontage roads and one interchange at KP 26.5 (PM 16.5). The geometric cross section from KP 22.6 to 26.5 (PM 14.0 to 16.5) for this alternative is as follows:

4-Lane Expressway
- 18.6 m (61') median
- 4-3.6 m (12') lanes
- 3.0 m (10') outside shoulders
- 1.5m (5') inside shoulders
- 110 km/h design speed

The geometric cross section from KP 26.5 to 27.7 (PM 16.5 to17.6) for this alternative is as follows:

4-Lane Freeway
- 18.6 m (61') unpaved median
- 4-3.6 m (12') lanes
- 3.0 m (10') outside shoulders
- 1.5m (5') inside shoulders
- Frontage roads on both sides
- 2-3.6m (12') lanes (frontage)
- 1.2m (4') shoulders (frontage)
- 110 km/h design speed

An exception to these cross sections will take place from KP 23.8 to 24.9 (PM 14.8 to 15.5). At this location, existing truck climbing lanes are present. An 11.4 m paved median with median barrier will be required at these places. This will help eliminate much of the roadway excavation that would otherwise be necessary if existing roadway was to be widened to the outside in this area of high cut. The existing structural section will be utilized wherever possible to minimize aggregate material cost. New bridges will be constructed adjacent to existing structures to accommodate for the widened section and for frontage roads at Crawford Creek Bridge # 10-168, KP 23.5 (PM 14.6), and at McNab Creek Bridge # 10-04, KP 25.7 (PM 16.0).

A conventional or spread diamond interchange will be placed at Henry Station Road KP 26.5 (PM 16.5). In areas where no frontage roads are proposed, left turn pockets would be provided. A total of four left-turn pockets may be needed at KP 23.5, 25.4, 25.6, and 25.9 (PM 14.6, 15.8, 15.9, and 16.1). Right-turn pockets could be an added feature if expressway geometrics are present to allow traffic turning right to pull off the traveled way and decelerate before making the right-hand turn. Embankment slope flattening would take place as described in Alternative A.

From Attachment F, the estimated roadway excavation quantity for this alternative is 1,000,000 cubic meters (1.3 million cubic yards), and the roadway embankment quantity is 572,000 cubic meters (750,000 cubic yards). Disposal sites will need to be located for removal of surplus material.

Alternative C

The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6).

This alternative will consist of constructing a 4-lane expressway with partial controlled access with the following geometric cross section:

4-Lane Expressway
- 6.6 m (22') paved median
- 4-3.6 m (12') lanes (additional lanes at truck climbing locations)
- 3.0 m (10') outside shoulders
- 1.5m (5') inside shoulders
- 110 km/h design speed

The existing structural section will be utilized wherever possible to minimize aggregate cost. New bridges will be constructed adjacent to existing structures to accommodate for the widened section at Crawford Creek Bridge # 10-168, KP 23.5 (PM 14.6), and at McNab Creek Bridge # 10-04, KP 25.7 (PM 16.0). Left and right turn pockets would be located, as necessary, to service high traffic private driveways or approaches and to provide reasonable emergency ingress and egress within the project limits.

From Attachment F, the estimated roadway excavation quantity for this alternative is 620,000 cubic meters (811,000 cubic yards), and the roadway embankment quantity is 207,000 cubic meters (270,000 cubic yards). Disposal sites will need to be located for removal of surplus material.

Alternative D

The proposed project limits are from KP 22.5 to 28.3 (PM 14.0 to 17.6).

Consist of constructing a 4-lane conventional highway (no access control) with the following geometric cross section:

4-Lane Highway
- 4.2 m (14') paved median
- 4-3.6 m (12') lanes (additional lanes at truck climbing locations)
- 3.0 m (10') outside shoulders
- 110 km/h design speed

This alternative was considered because it is consistent with the Hopland Unit III project that is currently in the design phase. The existing structural section will be utilized wherever possible to minimize aggregate cost. New bridges will be constructed adjacent to existing structures to accommodate for the widened section at Crawford Creek Bridge # 10-168, KP 23.5 (PM 14.6), and at McNab Creek Bridge # 10-04, KP 25.7 (PM 16.0). The median, where necessary may be considered for use as channelized turn lanes to provide access to private driveways within the project limits.

From Attachment F, the estimated roadway excavation quantity for this alternative is 480,000 cubic meters (630,000 cubic yards), and the roadway embankment quantity is 160,000 cubic meters (210,000 cubic yards). Disposal sites will need to be located for removal of surplus material.

SYSTEM PLANNING

The 1994 Route Concept Report for Route 101 lists the North Hopland project as an "improvement needed to achieve the route concept". The North Coastal Counties Supervisor's Association lists the North Hopland 4-Lane Freeway/ Expressway as the fourth highest priority improvement project in their 1998 "Route 101 Improvement Priorities" list. Mendocino County Council of Governments lists this project as the fourth highest priority new facility improvement in their 1996 Regional Transportation Plan (the highest priority project has been fully programmed, and the second highest priority project has been programmed for environmental work only).

This project is also listed in the "Inter-Regional Improvement Program Track 2000 Update" for programming in the "nearer term" (1998-2004 STIPs). This is a Caltrans statewide planning document and a follow-up to Strategic Planning.

ENVIRONMENTAL DETERMINATION

Major environmental resources within the vicinity of the project include:

- Prime agricultural lands
- Oak woodlands
- Wetland and reparian habitats
- Waters of the U.S.
- Potential threatened, endangered, and sensitive plant and animal species
- Potential cultural resources
- Social and economic resources
- Scenic Resources

Potential environmental issues include:

- Loss of prime agricultural land for highway construction
- Loss of oak woodlands
- Impacts to wetland and riparian habitats
- Impacts to waters of the U.S.
- Impacts to threatened, endangered, and sensitive plant and animal species
- Impacts to potential cultural resources
- Freeway traffic noise
- Air quality impacts
- Impacts to scenic resources
- Potential loss of business from regional or interregional traffic
- Potential impacts to community character, stability, cohesion, and way of life
- Direct and indirect effects to tourism
- Potential growth inducing impacts
- Need to locate disposal site(s) for excess material

Other issues, which could be potentially controversial, may arise when public and interest groups are contacted regarding this project proposal.

Based on the information available, the appropriate environmental document for both State and Federal regulation compliance would likely be an Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Caltrans would be the lead State agency and the Federal Highway Administration would be the lead Federal agency.

For more information, refer to the attached Environmental Scoping Checklist (Attachment H) and the attached Environment Process (Attachment O).

RIGHT OF WAY:

Alternative A

This alternative will affect 17 parcels consisting of farmland, single family residences, and one business. The majority of the affected parcels are farmland comprised of viticulture and grazing land. Two farm buildings near the south end of the project will need to be acquired. There is a concern that the underground septic system on the west side of the Retech-Sclienger business at KP 26.4 (PM 16.4) not be affected if possible. A large disposal site will be required for the removal of surplus dirt. Approximately 64.8 ha (160 acres) of right-of -way take are being considered. See Attachment J, Right-of-Way Scoping Checklist, for specifics.

Alternative B

The impact of this alternative is as noted in Alternative A with the exception that 12 parcels are affected and that the removal of the two mentioned farms is not anticipated. Approximately 36.4 ha (90 acres) of right-of-way take are being considered. See Attachment J, Right-of-Way Scoping Checklist, for specifics.

Alternative C

The impact of this alternative is as noted in Alternative A with the exception that 7 parcels are affected. The affected parcels are comprised of farmland and one business. No single-family residential parcels are affected. Approximately 16.2 square meters (40 acres) of right-of-way take are being considered. See Attachment J, Right-of-Way Scoping Checklist, for specifics.

Alternative D

The impact of this alternative is as noted in Alternative C with the exception that only 10.2 ha (25 acres) of right-of-way take are being considered. See Attachment J, Right-of-Way Scoping Checklist, for specifics.

No Build Alternative

No right-of-way is affected under the "no-build" alternative.

FUNDING/SCHEDULING

This Project Study Report (Project Development Study) proposes only to program the project through the Project Approval/Environmental Document (PA & ED) phase. No commitment for PS&E and construction schedule is being made at this time. Future programming will be needed for design, right-of-way acquisition, and construction. This project is expected to be a candidate for future STIP funding. There may be funding participation from the Regional Improvement Program (RIP).

Total estimated capital support cost and project scheduling are described in the Programming Sheet (Attachment M). Alternative A was the basis used to develop this cost.

Environmental support funding for the project will need to be identified for programming into the next available STIP. Attachment M, Programming sheet, contains a project schedule showing critical milestones. This schedule determines the earliest programming based on the actual or assumed start date for project development. The cost estimate provided in this report should then be escalated to the planned program year to establish the planning base cost for the project.

RECOMMENDATION

This PSR (PDS) recommends programming the Project Approval and Environmental Document (PA & ED) support component of this project in the 2000 STIP amendment at an estimated cost of $2.2 million dollars. Total project support cost through construction completion is $10.1 million dollars. Project alternatives identified in the "Project Alternatives and Alternative Analysis" section of this PSR should be studied further in the PA & ED phase and be coordinated with the Hopland Bypass Project.

Public meetings and project development team meetings will need to be held during the development of this project. It is anticipated that variations of the existing project alternatives or additional alternatives will be recommended and developed, if they have the potential to minimize project impacts or costs. For public involvement and a tentative schedule of the environmental process, see Attachments N and O.

It is also recommended that further follow up studies be carried out to finalize project scope and funding requirements such as: constructability, value analysis, traffic management plan, safety analysis, traffic forecast, operation, and life cycle benefit/cost analysis.

It should also be noted that the alternatives developed for the PSR (PDS) were based on August 1996 aerial maps and as-builts, within an eight week time frame. Alternatives that consider minimizing right-of-way and environmental impacts should be re-evaluated during the PA & ED phase. In addition, layouts should be re-evaluated when more accurate survey information becomes available so that earthwork quantities and right-of-way requirements can be determined more accurately.

The Project Development Coordinator, John Steele, reviewed the design concept on December 9, 1999 and concurred with the PSR (PDS) alternatives.

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ATTACHMENTS – Report attachments are as follows:

Attachment A – Location Map

Attachment B – Vicinity Map

Attachment C – Plan of Alternatives (aerial photographs of project site)

Attachment D – Typical Section

Attachment E – Land Use Map

Attachment F – PSR (PDS) Cost Estimate

Attachment G – Design Scoping Listing

Attachment H – Environmental Study Checklist

Attachment I – Traffic Scoping Checklist

Attachment J – Right of Way Scoping Checklist

Attachment K – PSR Performance Measure Evaluation Checklist

Attachment L – Adopted Highway Map (1964)

Attachment M –Programming Sheet

Attachment N – Stage I Work Program

Attachment O – Environmental Process